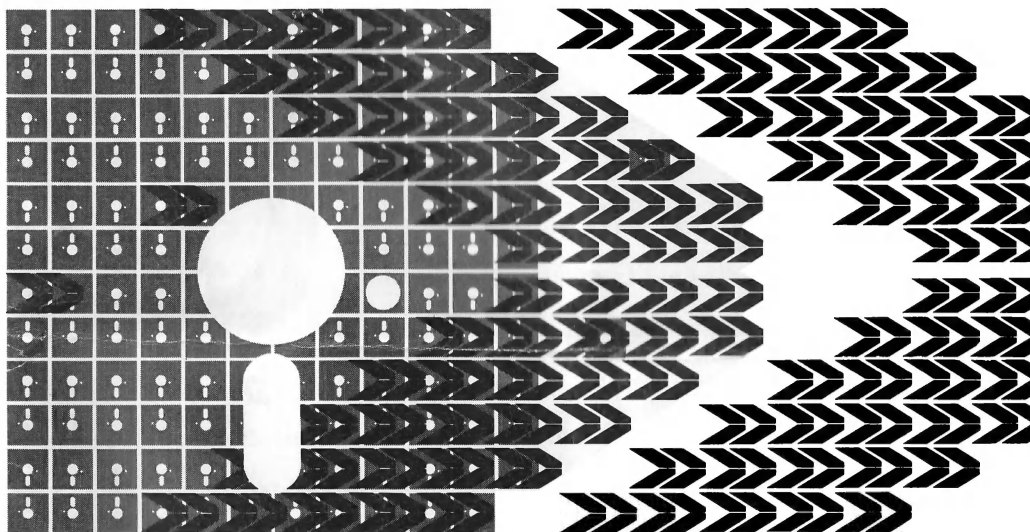


EPYX[®] **Vorpal[™]** **Utility Kit**

For Commodore 64[®]/128[™]



Instruction Manual

Programmed and Designed
by
Scott Nelson and Stephen Landrum

WHAT IS THE VORPAL™ UTILITY KIT?

The *Vorpal Utility Kit* is a product which adds to your computer the ability to handle a new type of disk file, the *Vorpal™* file! Vorpal files load up to 25 times faster than normal disk files. The *Vorpal Utility Kit* provides all the tools needed to work with VORPAL files, plus it brings you many other useful utilities to help you get the most from your computer.

HOW THE PROGRAM IS ORGANIZED

When you boot the disk, a program called VFILER™ is loaded into your computer's memory. Once loaded, it remains in memory until you turn your computer off. VFILER is the program that lets your computer understand and use VORPAL files. As soon as VFILER is loaded, you may go right to BASIC or you can select one of the utilities.

LOADING INSTRUCTIONS

1. Set up your Commodore 64/128 as shown in the Owner's Manual.
2. Turn the computer and disk drive on.
3. Insert the *Vorpal Utility Kit* disk into the disk drive, with the label facing up, and the oval cutout pointing toward the back.
4. Commodore 128: Set system to C-64 Mode.
5. Type **LOAD""",8,1** and press the **RETURN** key.

To load with the EPYX FAST LOAD™ CARTRIDGE:

1. Set up your Commodore 64/128 as shown in the Owner's Manual.
2. Insert the *Fast Load Cartridge* into the cartridge slot of your computer. The *Fast Load Cartridge* automatically sets the Commodore 128 to C 64 mode.
3. Turn the computer and disk drive on.
4. Insert the *Vorpal Utility Kit* disk into the disk drive, with the label facing up, and the oval cutout pointing toward the back.
5. Press the **C=** (Commodore) key and the **RUN/STOP** key to load the program.

Then the *Vorpal Utility Kit* menu appears:

VORPAL UTILITY KIT

VFILER IS INSTALLED

A> RETURN TO BASIC

B> VORPAL DISK/FILE UTILITIES

C> HEAD ALIGNMENT/SPEED CHECK

D> VORPAL DISK COPY UTILITY

E> VLOADER INSTALL

WHICH COMMAND? A

Press the letter next to the option you want, or use the cursor keys to move the cursor to the option you want and then press **<CR>**. The program takes you to whichever option you selected. Each option is explained in its own section.

About VFILER

USING VFILER WHILE IN COMMODORE BASIC

VFILER stays installed when you return to Commodore BASIC. Use VFILER to load and save VORPAL files, which can load up to 25 times faster than normal files. Directory entries for VORPAL files show the file type as SR?, or as VRP in the VORPAL DISK/FILE UTILITIES.

To save a VORPAL file, just put the letter V followed by a colon ("V:") in front of the file name when you save it. Load a VORPAL file the same way you would load a normal program file.

For example, if you want to save a program called ALEX in VORPAL format, type:

SAVE"V:ALEX",8

and press the RETURN key (<CR>). Then if you want to load it back in, type

LOAD"ALEX",8

and press <CR>.

If VFILER is not installed, and you wish to save a VORPAL file, first save it with the normal save command and then use the COPY/CONVERT FILES option in the VORPAL DISK/FILE UTILITIES, to change it into a Vopal file.

To disable VFILER, type

SYS 53242

then press the RETURN key (<CR>).

To re-enable VFILER, type

SYS 53245

then press <CR>.

WARNINGS ABOUT VFILER

Do not try to use the normal V: command to validate a disk that has any VORPAL files on it, or you might lose some of the information on the disk. Instead, use the VORPAL DISK/FILE UTILITIES to validate a disk with VORPAL files.

Use the VORPAL DISK/FILE UTILITIES to delete a VORPAL file. You can't delete (scratch) a VORPAL file with the normal S: command.

Use the VORPAL DISK COPY UTILITY to copy a disk that has any VORPAL files on it. Other copy programs may not copy disks with VORPAL files correctly, even though they may appear to copy correctly.

VFILER is intended for use with BASIC programs. You can also use VFILER with some machine language programs, but it will not work with all of them.

Most commercial software and some machine language programs will load over VFILER, making you unable to load and save VORPAL files.

The RETURN TO BASIC option

RETURN TO BASIC exits the *Vorpal Utility Kit* menus, but leaves VFILER installed in memory to enable you to use VORPAL files.

VORPAL DISK/FILE UTILITIES

Selecting the VORPAL DISK/FILE UTILITIES option from the main menu of the *Vorpal Utility Kit* gives you the menu of the Vorpal Disk/File Utilities.

VORPAL DISK/FILE UTILITIES

- A> RENAME DISK
- B> VALIDATE DISK
- C> FORMAT DISK
- D> PACK DISK

- E> FILE INFORMATION/CATALOG
- F> DELETE FILE
- G> UNDELETE FILE
- H> CHANGE FILE TYPE
- I> PROTECT FILE
- J> UNPROTECT FILE
- K> SET BOOT FILE
- L> RENAME FILE
- M> COPY/CONVERT FILES

- N> SET DRIVE DEFAULTS
- O> EXIT TO MAIN MENU

<SOURCE> DRIVE = 8, <DESTINATION> DRIVE = 8

INSERT <SOURCE> DISK, SELECT OPTION:

Remove the *Vorpal Utility Kit* disk from the disk drive, and insert the disk that you want to operate on (source disk).

To select a utility, either type the letter for the option and press <CR> or move the cursor up or down the menu to that option, then press <CR> (the RETURN key). To return to the main menu of the *Vorpal Utility Kit*, select the EXIT TO MAIN MENU option.

Use the cursor up/down key (CRSR, to the right of the <SHIFT> key) to move the cursor down the menu.

Press <SHIFT> with the cursor up/down key (CRSR) to move the cursor up the menu.

USING CATALOGS (DIRECTORIES) ON THE SOURCE DISK

Most of the file utilities list the source disk's catalog (directory). (The exceptions are UNDELETE FILE--shows only the deleted files, and CHANGE FILE TYPE--shows only the program (PRG), sequential (SEQ), and user (USR) files.)

To select a file, use the cursor keys to move up and down in the catalog and press <CR> when the cursor is on the file you want; or, type the letter next to the file you want and press <CR>.

If you want to use the current option on a different source disk, take the current disk out of the drive, put the new disk in, and press F1.

Each catalog entry lists a letter for menu selection, the size of the file in sectors, the file type, and the file name.

File types are:

PRG	program
SEQ	sequential
USR	user
REL	relative
VRP	vorpai

A < (left angle bracket) indicates that a file is protected. Whenever you select an option that will change a protected file, you'll get a warning. If you want to go ahead and change the file, type Y (for yes); if not, type N (for no). Note that Vorpai files are always created as protected and should be left that way.

An * (asterisk) indicates that a file is still open (usually due to an error when the file was last written to).

If the source disk's catalog is longer than one page, the message
(<SP> FOR MORE)

appears on the screen's bottom line. Press <SP> to see the next page of the catalog. If you are on the catalog's last page when you press <SP>, you'll go back to the catalog's first page.

No matter what page you start on, when the utility is finished, it returns you to the directory's first page.

For example, if you want to protect the first two files listed on the catalog's third page:

1. Select the PROTECT FILE OPTION.
2. Then press <SP> once to get to the catalog's second page, and <SP> once again to get to the third page.
3. The program asks:
PROTECT WHICH FILE?
4. And you answer:
A
and press <CR> to protect the first file on the third page.
5. Press <SP> once again to get to the catalog's second page, and <SP> yet another time to get to the catalog's third page. Now you can protect the file you want to protect.

6. To protect the second file, type:

B

and press <CR>. The first and second files on the catalog's third page are now protected. If you look at the catalog again, you'll see < (left angle bracket) beside the file type for the files you've protected.

Entering File Names

When prompted to enter a filename in some of the Vorpul Utilities, you can enter the name with or without quotation marks. If however, the filename begins or ends with blank spaces, quotation marks must be used.

DISK UTILITIES

RENAME DISK

The RENAME DISK utility changes the name of the disk. The current disk name appears in quotation marks on the top line of the screen.

To rename a disk:

1. Place the disk you wish to rename in the disk drive and select the RENAME DISK option. At the prompt, enter the disk's new name and press <CR>. The new name appears immediately on the screen's top line. If you don't want to rename the disk, just press <CR>.
2. To return to the Vorpul Disk/File Utilities menu, press <CR>.

VALIDATE DISK

The VALIDATE DISK utility checks every file on the disk, builds a new BAM (block availability map), and optionally deletes any files that have errors in them.

Note: Unlike the validate command built into your 1541 disk drive, this validate command works with all normal file types.

To validate a disk:

1. Place the disk you wish to validate in the disk drive and select the VALIDATE DISK option.
2. If the utility discovers any errors within a file, it asks you if you want to delete the file. If you do, press **Y** (for yes); if not, press **N** (for no).
3. When the validation is finished, a message will be displayed reporting how many sectors are free, and how many are available in the largest block for VORPAL files.
4. To return to the Vorpul Disk/File Utilities menu, press <CR>.

FORMAT DISK

The FORMAT DISK utility erases and formats a disk so your Commodore computer can use it. If you are going to format an old disk, remember that any files already on the disk will be erased; you cannot use UNDELETE (or anything else) to recover these files.

Note: FORMAT DISK will only format the disk in the destination drive.

To format a disk:

1. Place the diskette you wish to format into the disk drive and select the FORMAT DISK option.
2. Type a name for the disk and press <CR>. (If you change your mind about formatting the disk, just press <CR>).
3. Enter a volume ID for this disk (use any two letters or digits), then press <CR>.
4. If you haven't already done so, place the disk that you want to format in the disk drive, then press <CR>.
5. When the formatting is completed, press <CR> to return to the utilities menu.

PACK DISK

Pack disk will copy all of your files to another disk, packed together to allow the most space for VORPAL files. Unlike normal files which can occupy sectors at different locations on the disk, VORPAL files occupy sectors which are grouped together.

Note: PACK DISK will erase all files on the destination disk.

To pack a disk:

1. If using one drive, place the source disk (disk to be packed) in the disk drive and select the PACK DISK option. Switch disks whenever prompted, and press <CR>.
2. If using 2 drives, place the source disk in the source drive, and the destination disk in the destination drive, and then select the PACK DISK option.
3. To return to the Vorpak Disk/File Utilities menu, press <CR>.

FILE UTILITIES

FILE INFORMATION/CATALOG

FILE INFORMATION checks the file for errors, displays the starting address, the ending address, the length of the file, and the file type byte in hexadecimal. If the file is a relative file, FILE INFORMATION also displays the first sector of the side-sector list, the record length, and the number of records contained in the file. Numbers following a dollar sign ("\$\$") are in hexadecimal notation; numbers enclosed in parentheses are decimal. The file type byte has several pieces of information about the file. The breakdown is given as follows:

bits 0-3: the file type: 0 = deleted
 1 = sequential

2 = program
3 = user
4 = relative
8 = VORPAL

- bits 4-5: undefined: some programs may have defined their own use for these bits; for example, the *Programmers' BASIC Toolkit™* uses them to identify sprite, font, and picture files.
- bit 6: closed bit: If this bit is clear, the file is still open (probably had an error the last time it was written to), or is a deleted file.
- bit 7: Protected bit: If this bit is set, the file is protected from being accidentally scratched or written to.

Note: The file size for program, sequential, and user files does not include the first two bytes, which are used for the load address when the file is loaded.

To use the FILE INFORMATION/CATALOG utility:

1. Place the disk containing the file(s) you want information about in the disk drive and select the FILE INFORMATION/CATALOG option.
2. The utility asks
DESCRIBE WHICH FILE?
3. Type the appropriate letter and press **<CR>**, or press **<R/S>** to return to the Vorpai Disk/File Utilities menu.
4. You can select another file to describe or press **<R/S>** to go back to the Vorpai Disk/File Utilities menu.

DELETE FILE

The DELETE FILE utility removes file(s) from the directory and makes the disk space available for other files.

To delete a file:

1. Place the disk containing the file(s) you want to delete in the disk drive and select the DELETE FILE option.
2. Select the appropriate letter (or you can move the cursor to the appropriate file) and press **<CR>**. If the file is not protected, it is deleted and the utility continues (step 4). If the file is protected, the following message appears:
**"filename" IS PROTECTED
DELETE IT ANYWAY?**
Type **Y** (for yes) to go ahead and delete the protected file, or type **N** (for no), then press **<CR>**.
4. If there is something wrong with the file, you will be asked whether or not you would like to VALIDATE the disk (see the VALIDATE DISK option).
5. After the utility finishes, it returns you to the disk's directory. You can then select another file to delete or press **<R/S>** to return to the Vorpai Disk/File Utilities menu.

UNDELETE FILE

Undelete file allows you to recover any deleted (scratched) files which are still on the disk and have not yet been written over.

To undelete a file:

1. Place the disk containing the file(s) you want to undelete in the disk drive and select the UNDELETE option.
2. Type the letter that corresponds to the file that you want to recover, and press <CR>. (If you don't need UNDELETE FILE, press <R/S> to go back to the Vorpak Disk/File Utilities menu.)
3. If the file cannot be recovered, this message appears:
THAT FILE IS UNRECOVERABLE
Press <CR> or <R/S> to return to the list of deleted files.
4. If the file can be recovered, a message about the status of the file is displayed, and you will be asked:
SHOULD I RESTORE THE FILE?
5. Type **Y** (for yes) to recover the file, or type **N** (for no) to leave the file deleted, then press <CR>.
6. If the file used to be a program, sequential, or user file, this question then appears:
WHAT TYPE OF FILE IS IT (P, S OR U)?
7. Type **P** for a program file, **S** for a sequential file, or **U** for a user file, then press <CR>. If you find out later that you recovered the file as the wrong type, use the CHANGE FILE TYPE option.
8. If you recover a file and determine that it is not what you wanted (i.e. only part of the file was recovered), you should use the DELETE FILE option and then the VALIDATE DISK option in the VORPAL DISK/FILE UTILITIES.
9. Press <R/S> to return to the Vorpak Disk/File Utilities menu.

CHANGE FILE TYPE

This utility is normally used when a file has been recovered by UNDELETE FILE with the wrong file type. The CHANGE FILE TYPE utility changes the type of a program (P), sequential (S), or user file (U) to another one of those types. Note that only program, sequential, and user files appear in the directory.

*Note: This utility should be used in accordance with the UNDELETE utility only. To actually change a file to a new **format**, use the COPY/CONVERT FILES option.*

To change a file type:

1. Insert the disk containing the file(s) you want to change in the disk drive and select the CHANGE FILE TYPE option.
2. Type the letter that corresponds to the file that you want to change, and press <CR>.
3. The utility then asks:
WHAT TYPE SHOULD IT BE (P, S, OR U)?
4. Type **P** for program, **S** for sequential, or **U** for user, then press <CR>.
5. You can select another file to change or press <R/S> to go back to the Vorpak Disk/File Utilities menu.

PROTECT FILE

The PROTECT FILE utility protects a file against accidental deletion. Protected files are marked in the catalog with the symbol < (left angle bracket) after the file type.

To use the PROTECT FILE utility:

1. Place the disk containing the file(s) you want to protect in the disk drive and select the PROTECT FILE option.
2. The utility asks:

PROTECT WHICH FILE?

3. Type the appropriate letter and press <CR>.
4. If you want to protect another file, select it.
5. To return to the Vorpak Disk/File Utilities menu, press <R/S>.

UNPROTECT FILE

The UNPROTECT FILE utility cancels the protection of a file against deletion. *Note: Vopal files should be left protected.*

To use the UNPROTECT FILE utility:

1. Place the disk containing the file(s) you want to unprotect in the disk drive and select the UNPROTECT FILE option.
2. The utility asks:

UNPROTECT WHICH FILE?

3. Select the appropriate letter and press <CR>.
4. If you want to unprotect another file, select it. To return to the Vorpak Disk/File Utilities menu, press <R/S>.

SET BOOT FILE

The SET BOOT FILE utility allows you to select a file to be moved to the first entry in the directory. When a file is the first entry in the catalog, you can load it by typing:

LOAD "*", 8, 1

This utility may also rearrange some of the other entries in the directory.

To use the SET BOOT FILE utility:

1. Place the disk containing the file you want to have as the boot file in the disk drive and select the SET BOOT FILE option.
2. The utility asks:

SET BOOT WHICH FILE?

3. Select the appropriate letter and press <CR>.
4. To return to the Vorpak Disk/File Utilities menu, press <R/S>.

RENAME FILE

The RENAME FILE utility changes the name of a file.

To rename a file:

1. Place the disk containing the file(s) you want to rename in the disk drive and select the RENAME FILE option.

2. The utility asks:

RENAME WHICH FILE?

3. Select the appropriate letter and press **<CR>**. The utility says:
RENAME "filename" ENTER NEW NAME (<CR> TO KEEP OLD)
4. Type the file's new name (or you can press **<CR>** to keep its current name).
5. If you want to rename another file, select it.
6. To return to the Vorpak Disk/File Utilities menu, press **<R/S>**.

COPY/CONVERT FILES

COPY/CONVERT FILES allows you to both copy files and change the format of files.

To use COPY/CONVERT files:

1. Place the disk containing the file(s) to copy/convert in the disk drive and select the COPY/CONVERT option.
2. Select the file(s) you want to convert by using the cursor keys and pressing **<CR>**, or by typing the letter next to the file and pressing **<CR>**.

Note: Unlike other menus in the *Vorpak Utility Kit*, this option will only highlight the file names selected.

3. Selecting a file that has already been selected will deselect it and remove the highlight. Pressing **<F1>** will deselect all files.
4. After all the files you wish to copy are selected, press the **<F7>** key to begin copying.
5. When all the files are selected, you will be asked:

COPY TO SAME DISK?

6. Press **Y** if you are copying to the same disk, **N** if to a different disk.
7. You will then be asked:

CONVERT FILES?

8. Press **Y** if you want to convert the files to a different format, **N** if not.
9. If you choose to convert files, you will be asked:

CONVERT TO WHICH TYPE (P, S, U, R, or V)?

(P = Program, S = Sequential, U = User, R = Relative, V = Vorpak)

10. Select one of the above file types and press **<CR>**.
11. If you are copying to a different disk and are using only one disk drive, you will be prompted to swap disks during the copy. If you are copying to a different disk and are using more than one disk drive, insert the destination disk in the destination drive (See: SET DRIVE DEFAULTS).
12. When COPY/CONVERT is finished, you can select more files to copy/convert or press **<CR>** to return to the VORPAC DISK/FILE UTILITIES menu.

SET DRIVE DEFAULTS

SET DRIVE DEFAULTS allows you to change the designated source and destination disk drives.

To SET DRIVE DEFAULTS:

1. Select the SET DRIVE DEFAULTS option.
2. The program will display the current source and destination drive numbers.

3. You will then be asked to enter new source and destination drive numbers. If you want either drive to remain the same, just press <CR>.

HEAD ALIGNMENT/SPEED CHECK

1. Place the *Vorpal Utility Kit* disk in the drive you want to check and select the HEAD CHECK UTILITY option.
2. The following list of options appears:
 - A> CHECK/REPAIR HEAD ALIGNMENT
 - B> CHECK SPEED
 - C> DRIVE TO CHECK (8)
 - D> EXIT TO MAIN MENU

Type the letter or use the cursor keys to select one of the above options.

CHECK/REPAIR HEAD ALIGNMENT - checks and optionally corrects your drive's head alignment. Make sure your *Vorpal Utility Kit* disk is in the drive you want to check.

1. Select the CHECK/REPAIR HEAD ALIGNMENT option.
2. The program will check the alignment and report back the status.
3. If the drive's head is out of alignment, you will be asked:

REPAIR HEAD ALIGNMENT?

Press Y if you want to repair it, N to cancel. After attempting to repair the alignment, the program will again check the status (step 2).

CHECK SPEED - checks and reports the speed of your drive in RPM. Normal drives should be rotating between 297 and 303 RPM.

DRIVE TO CHECK - allows you to set which drive you are going to check. The program will ask you to designate the appropriate drive number (8-11).

Note: If your disk drive is out of alignment and CHECK/REPAIR HEAD ALIGNMENT does not solve the problem, and/or if the disk drive speed is outside the normal operating range, you should consider taking it to a qualified service technician.

VORPAL DISK COPY UTILITY

VORPAL DISK COPY UTILITY will copy and verify any standard (non-protected) disk in seconds.

To use the VORPAL DISK COPY UTILITY:

1. Insert the disk you wish to copy in the disk drive and select the VORPAL DISK COPY option.
2. The program will then give you the following options:

BEGIN COPY - will start copying the disk. You will be prompted to insert and change disks before and during the copy process.

Note: The destination disk will be formatted automatically by the program.

CHANGE SOURCE DRIVE - allows you to select which drive you will copy from. Type the number of the drive (8-11 are valid).

CHANGE DESTINATION DRIVE - allows you to select which drive you will copy to.

CHANGE DRIVE NUMBER - allows you to change the internal number of a drive you are using. To use this option, turn off both drives. Turn on the drive you want to write to (the drive you are going to change). Select **CHANGE DRIVE NUMBER**, and enter a new number for that drive.

EXIT TO MAIN MENU - returns you back to the main menu.

VLOADER INSTALL

VLOADER INSTALL installs VLOADER (a quick version of VFILER) on one of your disks. VLOADER allows you to load, but not save, VORPAL files.

To use VLOADER INSTALL:

Insert the disk you want to install VLOADER on into the disk drive and select the VLOADER INSTALL option.

The program will then give you the following options:

INSTALL VLOADER - will write the files VBOOT™ and VLOADER to the disk and will make VBOOT the first entry in the directory.

INSTALL WITH LOAD FILE - will prompt for a file name. VBOOT and VLOADER will be written to the disk. VBOOT will be made the first file in the directory.

INSTALL WITH RUN BASIC PROGRAM - works like **INSTALL WITH LOAD FILE** except that VLOADER will execute a RUN command after loading the specified file.

INSTALL WITH SYS TO A PROGRAM - will prompt for a file name and a sys address. The sys address can be entered in decimal or in hexadecimal by preceeding the number with a dollar sign ("\$"). VBOOT and VLOADER will then be written to the disk with VBOOT written as the first file in the directory.

CATALOG - will display the directory of the disk. If there are more files than are shown, pressing the space bar will show the next screen.

EXIT TO MAIN MENU - returns you to the *Vorpai Utility Kit* main menu.

Technical information

The actual format of VORPAL files on the disk is also quite different from normal files.

VORPAL sectors look like normal sectors to most copy programs, but will not be copied correctly if the program is not sophisticated enough. It is essential that you use the copy programs supplied with the *Vorpal Utility Kit* in order to copy a disk that has VORPAL files on it. In order to achieve the amazing speed possible only with VORPAL files, VFILER (VLOADER) will blank the screen of the computer.

VFILER and VLOADER both reside in memory starting at \$CE00 (52736), living for the most part under the hardware registers and under the ROM kernel. VFILER and VLOADER work with the monitor in the *Fast Load Cartridge*, allowing you to load and save VORPAL files by prefixing their names with "V:". When using the R (read) command in the *Fast Load Cartridge* monitor, the load address of a VORPAL file will be shown incorrectly. Machine language programs that do not have their own disk loaders, and that do not use memory above \$CE00 (52736) will be able to work with VFILER and VLOADER.

For speed, VORPAL files use contiguous bi sequential blocks on the disk, allocating every other sector on a track, even numbered sectors first, and then the odd sectors. At the end of each track, VORPAL moves to the next track, starting with sector zero, except directory track \$12 (18) which is skipped. When VFILER saves a file, it allocates disk space from the first block that has enough sectors available. VORPAL files created with the COPY/CONVERT FILES option in the VORPAL DISK/FILE UTILITIES are written to the largest available block of sectors.

The PACK DISK option in VORPAL DISK/FILE UTILITIES moves all files away from the center of the disk, in order to allow the most room for VORPAL files. All standard files are moved to the end of the disk, and all VORPAL files are moved to the beginning of the disk. If VFILER or VLOADER are in memory, but disabled, just type:

SYS 53245

to re-enable. To disable VFILER or VLOADER, type:

SYS 53242

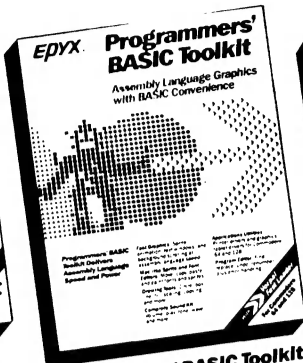
NOTE: The *Vorpal Utility Kit* program and its related documentation are copyrighted. You may incorporate the Vorpal File Format in programs of your own creation. You may not register a claim to copyright any program which incorporates the Vorpal File Format unless you obtain written permission from Epyx. No program which incorporates or is combined with the Vorpal File Format, whether copyrighted or not, may be sold or resold. Use of Vorpal formatted programs for commercial purposes without written permission from Epyx is strictly prohibited.

Commodore 64 is a registered trademark and Commodore 128 is a trademark of Commodore Electronics Limited. VORPAL, VFILER, VBOOT, FAST LOAD, and Programmers' BASIC Toolkit are trademarks of EPYX, Inc.

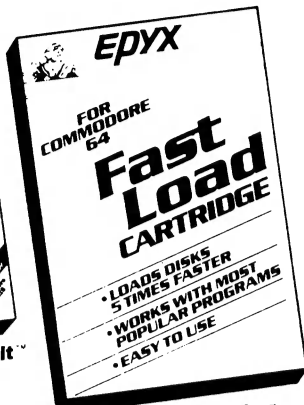
YOU'RE LOOKING TO DO MORE WITH YOUR COMPUTER. SO ARE WE!



**New Microsoft® Multiplan™
for Commodore 64 and 128**
Professional Spreadsheet
Power for Commodore 64/128
Computers



Programmers' BASIC Toolkit™
Assembly Language Power
with BASIC Convenience!



**Tired of Waiting for Your
Programs to Load?**
Fast Load™ Cartridge for
Commodore 64 and 128

**If you want to do more with your computer—make it powerful,
make it work, and make it fast—look for the new Epyx software
at your local computer retailer.**

EPYX

Microsoft and Multiplan are registered
trademarks of Microsoft Corporation.
Commodore 64 is a registered trademark
and Commodore 128 is a trademark of
Commodore Electronics Limited.

EPYX®

Vorpal is a trademark
of Epyx, Inc. Copyright
1986 Epyx, Inc., Sunnyvale,
California 94089.

PROOF OF PURCHASE
PRODUCT NO.
91107D-60